

## **Circularity in the Plastics Industry: Insights from Material Flow Analysis in Various Value Chains**

Plastic waste, both in micro and macro forms, constitutes a significant environmental challenge. In response to growing environmental concerns and the plastics industry's resource limitations, our multidimensional research study assesses the implications of microplastics (MPs) discharged into the environment by the plastics sector as well as providing circularity solutions for the plastics industry in Turkey. The research presents findings from a material flow analysis (MFA), highlighting areas in the plastics value chain requiring intervention for enhanced resource efficiency, circularity, and reduced environmental impact by taking İzmir province as a pilot study area.

MFA data, encompassing material inventory and process flows, were collated from credible sources, including the OECD, EUROSTAT, and the Turkish Statistical Institute (TurkStat). The analysis spans all stages, from raw material acquisition to disposal, and identifies plastic packaging, building and construction plastic waste, LDPE, and HDPE raw materials as significant focal points. In terms of recycling, 59% of plastic packaging waste is recycled off-site, while the recycling rate for total plastic waste stands at 12.9%, significantly below the EU average of 48%. Challenges primarily manifest in consumer behavior, waste collection/segregation, unsanitary and sanitary disposal, and illegal incineration. Addressing these issues is crucial for effective resource management in the face of mounting plastic waste concerns.

By Dr. Emrah Alkaya

Date: 1.11.2023 & Time: 15:40

Join Microsoft Teams Meeting

[https://teams.microsoft.com/l/meetup-join/19%3aOPj8-FHclUGYsPys9gPJZE\\_e2W9r6O4x5pkxOOqCzus1%40thread.tacv2/1697192842621?context=%7b%22id%22%3a%22a6d8404c-cd2d-433b-8f4c-c5d18f9693ca%22%2c%22oid%22%3a%22c1e16bd9-10f5-4bf7-ba36-2e7924d532d7%22%7d](https://teams.microsoft.com/l/meetup-join/19%3aOPj8-FHclUGYsPys9gPJZE_e2W9r6O4x5pkxOOqCzus1%40thread.tacv2/1697192842621?context=%7b%22id%22%3a%22a6d8404c-cd2d-433b-8f4c-c5d18f9693ca%22%2c%22oid%22%3a%22c1e16bd9-10f5-4bf7-ba36-2e7924d532d7%22%7d)

Meeting ID: 274 524 867 971

Passcode: ULeqcv